UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: April 17, 1984

SUBJ: RCRA Industrial Survey Report

FROM: Thomas Michel, Environmental Engineer
Compliance Monitoring and Enforcement Section

TO: Gerald M. Levy, Chief
Compliance Monitoring and Enforcement Section

I. General Information

A. Facility Name:	Carroll Products, Inc. Route 91 Wood River Junction, RI 02894
B. RCRA Contact:	Arthur F. Schwartz Director of Chemical Operations
C. Responsible Official:	Dr. K.C. Pande, President
D. Date of Inspection:	April 3, 1984
E. Purpose of Inspection:	State Overview
F. Persons Participating on the Inspection:	EPA - Thomas Michel State - Alicia Good Company- Arthur F. Schwartz

II. RCRA Reporting/Information Requirements

1. Facility I.D. No.:	RID002042216
2. Type of operation:	Generator
3. Date of notification to EPA:	July 13, 1981
4. Date of submittal of Part A to EPA:	None submitted

III. Source Description

Three (3) companies are located at this site, all owned and operated by Carroll Products.

1. Carroll Products, Inc.

Carroll Products manufactures diazochloride and blends iron oxide pigments for Sun Chemical Co.

Diazochloride is a chemical compound which is used in printed circuit boards to provide memory sensitization. Arthur Schwartz reported that diazochloride is basically produced by the "steroidification" with phenols or amides plus resins, dyes, and solvents (see attached chemical process flow diagram).

Various hazardous wastes are generated from the production of diazochloride. A description of and quantities of hazardous wastes generated are found in Table No. 1 .

The diazochloride hazardous waste streams are pumped to an 11,000 gallon holding tank.

Colored iron oxide (black, red, orange etc) is mixed in a ribbon blender, is ground in a grinder, and is then put in 55 gallon product drums. These drums of blended pigment are shipped to Sun Chemical Co.

Once or twice a year, the ribbon blender is rinsed out with a high-powered nozzeled hose. The rinse water is flushed to the flood area sump pump and this rinse is pumped to the facility 11,000 gallon holding tank.

2. Talb Industries

This company produces a liquid-mix dust control agent. First, Kex 450 concentrate (see attached "Manufacturing Record Card") is made up in an open 100 gallon mixing tank. Approximately four (4) gallons of this Kex 450 Conc. is added to a 55 gallon drum containing Sun Par 130 oil.

The dust control agent is produced on a batch basis and has not been produced in the last six (6) months. Arthur Schwartz reported that Carroll cleans out the 100-gallon mixing tank approximately twice a year. The tank is flushed out with the soapy water, the dirty water is drained out to a floor sump pump, and the waste solution is pumped to the facility 11,000 gallon holding tank.

3. Mitchell Manufacturing Corp

This company produces both liquid and dry institutional soap bleaches and detergents. Soda ash and surfactant phosphates are dry-blended in a 4000 pound tumbler and are drummed as product. Wastes generated are off-spec products and waste rinse solutions from cleaning out the 4000 lb. tumbler.

Table No 1.

EPA Waste No.	Description/Waste Analysis	Average Quantities Generated (gal. per month)
D007	Hazardous Waste Liguid N.O.S H_2O - 74.4% Na_2SO_4 - 17.5% NaCL - 7.1% Napthol - 150 ppm Chrome - > 5 ppm pH - 12	45,600
D002	Waste Corrosive Liquid Na_2SO4 - 74.4% NaCl - 17.5% Napthol - 150 ppm Chrome - > 5 ppm pH - 13.2	20,000
D001	Waste Heptane Flammable Liquid Heptane - 56% Methylene Chloride - 44%	400-800
D001	Waste Flammable Solids Diazoesters and floor sweepings	660

Liquid detergents are also produced by Mitchell. When Talb Industries is not producing Talb dust control, liquid detergents are mixed in the 100 gallon mixing tank.

During the time period of May 1983 to February 1984, Carroll sent off fifty-nine (59) drums of detergent waste, off site for disposal.

IV General Observations

A. Hazardous Waste Storage

The facility's primary storage area is a quonset hut which is located next building No. 9. Barrels and cardboard (industrial strength) drums containing hazardous wastes, unidentified wastes (chemicals and floor sweepings) and raw materials are stored in the quonset hut (see figure No. 1).

Observations of the storage facility are discussed below:

1. Approximately eighty-seven (87) fifty-five gallon containers contain wastes which have not been identified. At least twenty-two (22)drums of solid waste (floor sweepings) have been in the storage hut for 6-8 months. Sixteen (16) barrels of the "unknown" contents have been in the storage hut for "years and years" (as quoted by A. Schwartz).

2. Eight (8) barrels of off-spec. acid anilide have been stored at least for (4) years.

3. Thirty-four (34) barrels of waste methylene chloride and heptane have been stored for "years and years".

4. Many containers of old laboratory chemicals have been in storage since 1971.

5. Along the storage facility's south wall, approximately thirty (30) drums (industrial strength cardboard) were stacked 3-drums high and were not separated by wooden pallets. (Fig 1 - Area A)

6. Some of the drums in Area A showed evidence of leakage along the bottom portion of the drums.

7. Aisle space was not maintained in three (3) areas (Fig 1 - Areas C,D, and F).

8. There was spillage, from one drum of flammable solids, on the storage area floor (Fig 1 Area B)

9. In the area where drums of waste heptane and waste methlylene chloride are stored a couple of barrels showed evidence of leakage and free standing waste was on the top of at least two (2) barrels.

10. There was one open drum in Area C, and one drum of waste heptane, also in Area C, had free standing waste on top of the drum.

11. At least forty-one (41) containers had no labels.

12. Approximately ninety (90) drums had labels which were incomplete. (EPA Waste No., EPA I.D. No. not filled in, etc.)

13. Approximately sixty five (65) drums did not have any accumulation dates.

14. "No Smoking" signs were not posted in the storage facility.

15. Spill control equipment (e.g. "speedidry") was not located in the storage hut.

B. Outside Storage Area

Located outside, behind the facility's building No. 4, were fifteen (15) barrels of waste heptane. These barrels were stored on pallets which were located next to a 6,000 gallon storage tank (not in use). Arthur Schwartz reported that the barrels had been put there during the week of March 25, 1984.

Observations of the storage area:

1. Seven (7) barrels did not have any labels
2. Three (3) barrels were rusted
3. Free-standing liquid was on the top of three (3) barrels
4. Thirteen (13) barrels had no accumulation dates
5. Two (2) barrels were labelled:
   "Waste Heptane 1-17-84"
6. "No Smoking" signs were not posted.

C. "Diazo Bulking" Tank

1. There was corrosion on and leakage from a nipple located on the west end of the 11,000 gallon holding tank.

2. There was leakage from a weld located on the east end of the tank.

3. The concrete tank pedestals were beginning to deteriorate.

D. Contingency Plan and Emergency Procedures

1. A copy of the facility's proposed plan has been sent to local authorities.

2. The list included in the contingency plan which describes the physical description of all emergency equipment and presents a brief outline of their capabilities is inadequate.

E. Personnel Training

1. Facility personnel have not completed a program of class room instruction or on-the-job training as required by 40 CFR §264.16 (a)(1) as incorporated by Storage Rule No. 6.06

2. The proposed training program submitted to the Rhode Island DEM does not designate the person trained in hazardous waste management procedures who will direct the personnel training program.

3. Records that document that training or job experience required by Storage Rule No. 6.06 have been given to, and completed by, facility personnel did not exist at the time of inspection.

F. Inspections

The facility did not maintain an inspection schedule as required by 40 CFR §264.15 as incorporated by Storage Rule No.6.05.

G. Waste Analysis Plan

Carroll Products Inc. had not developed and followed a written waste analysis plan as required by 40 CFR §264.13 as incorporated by Storage Rule No 6.02.

H. Additional Observations

1. The facility did not have a hazardous waste storage permit

as required by 40 CFR §270.10(f).

2. Carroll Products had not:

   a. kept an operating record at the facility as required by 40 CFR §264.73 as incorporated by Storage Rule No. 6.12;

   b. prepared a biennial report as required by 40 CFR §264.75 as incorporated by Storage Rule No. 6.14;

   c. prepared a written closure plan as required by 40 CFR §264.112 as incorporated by Storage Rule No.6.16; or

   d. prepared a written cost estimate for closure as required by 40 CFR §264.142 as incorporated by Storage Rule No. 6.17.

3. Four (4) storage tanks (not in active use) are located in the southwest corner of the facility grounds. These tanks contain unidentified white residue.

V. Summary of Violations

1. EPA preliminary notification requirements Section 3010 (a) of RCRA

2. No hazardous waste storage permit - 40 CFR §270.10(f) and Generator Rule No. 2

3. Waste Analysis Plan - Storage Rule No. 6.02 (40 CFR 264.16)

4. Inspection schedule - Storage Rule No. 6.05 (40 CFR §264.15)

5. Personnel Training - Storage Rule No. 6.06 (40 CFR §264.16)

6. Design and Operation of Facility - Storage Rule No. 6.08 (40 CFR § 264.31)

7. Aisle Space Requirements - Storage Rule No 6.08 (40 CFR §264.35)

8. Contingency Plan and Procedures - Storage Rule No. 6.09 [40 CFR § 264.52 (e)]

9. Operating Record - Storage Rule No. 6.12 (40 CFR §264.73)

10. Biennial Report - Storage Rule No. 6.14 (40 CFR §264.75)

11. Closure Plan - Storage Rule No. 6.16 (40 CFR §264.112)

12. Closure Cost Estimate - Storage Rule No. 6.17 (40 CFR §264.142)

13. Condition of Containers - Storage Rule No. 6.18 (40 CFR § 264.171)

14. Management of Containers - Storage Rule No. 6.18 [40 CFR §264.173(a) and (b)]

15. Ignitable Wastes - Storage Rule No. 6.18(a) [40 CFR §264.17(a)] - No smoking signs

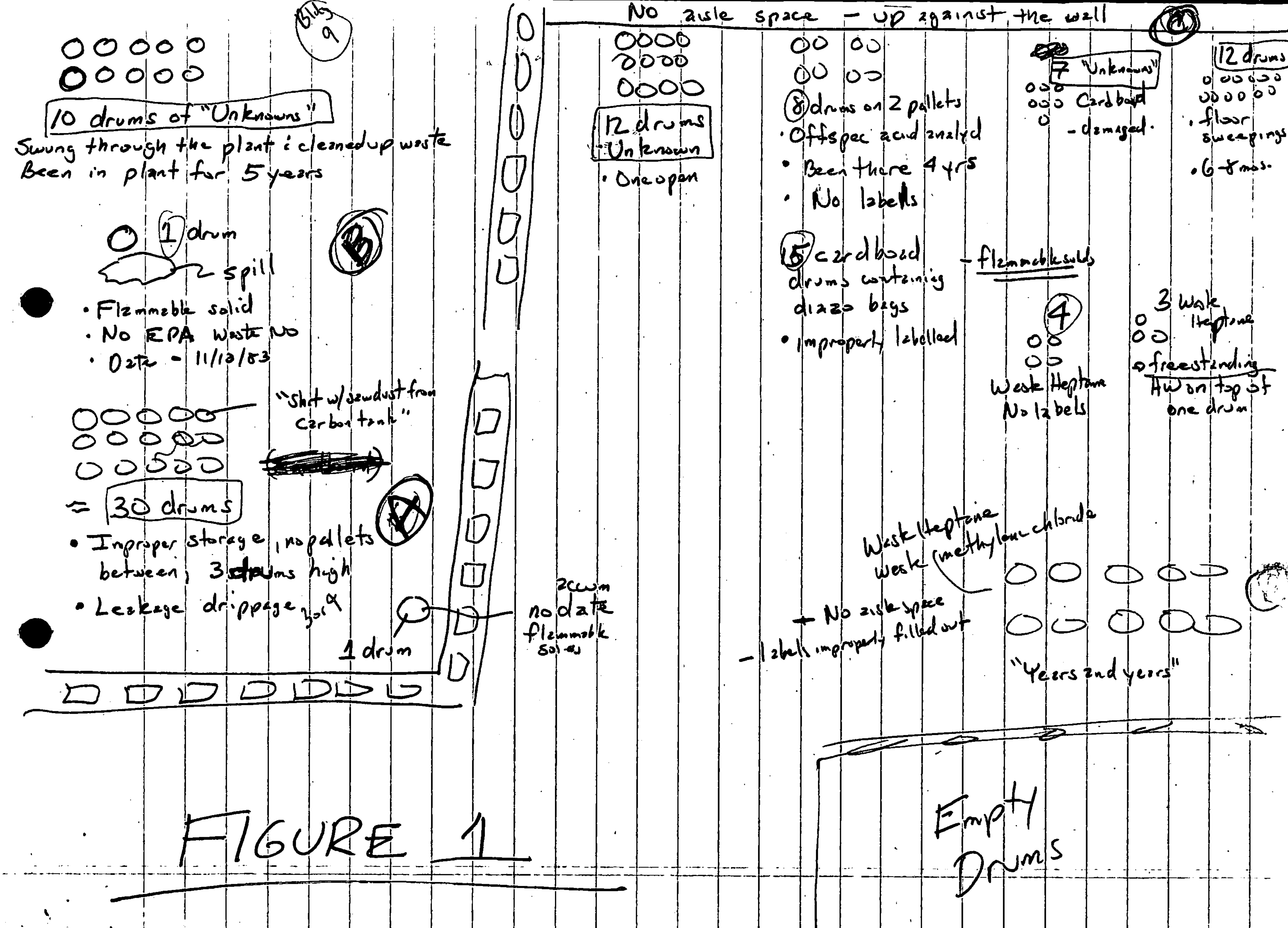

Bldg 9
10 drums of "Unknowns"
Swung through the plant & cleaned up waste
Been in plant for 5 years
B
1 drum
spill
• Flammable solid
• No EPA Waste No
• Date - 11/13/83
"Shit w/ sawdust from carbon tank"
≈ 30 drums
A
• Improper storage, no pallets between, 3 drums high
• Leakage drippage
1 drum
no date
flammable solids
No aisle space - up against the wall
12 drums
Unknown
• One open
8 drums on 2 pallets
• Offspec acid analyd
• Been there 4 yrs
• No labells
15 cardboard drums containing diazo bags
- flammable solids
• improperly labelled
7 "Unknowns"
Cardboard
- damaged
12 drums
• floor sweepings
• 6-8 mos.
4
Waste Heptane
No labels
3 Waste Heptane
freestanding
AW on top of one drum
Waste Heptane
waste (methylene chloride)
+ No aisle space
- labels improperly filled out
"Years and years"
Empty Drums

FIGURE 1

Raw Materials

Mitchell & Talb

Products

Cardboard → Cardboard — Waste Solids
· Drums in poor condition
· leakage

E

· Waste mineral spirits
· improper labels
Waste bags flammable solids

No accumulation dates: (2) dozen

O Pool - No accum. date.

F

[No Aisle space]

Freestanding bottles of chemicals containers (lab) (many)

muriatic acid, formic acid, absolute ether

Fooz and waste Heptane → leakage, leakage

"Years and Years"

(34) Drums

HW freestanding

No Aisle space
Improperly filled out labels

26 Drums
Raw Materials

(4) drums
· No labels
· Alkaiwaste
· All rusted

36 drums
· Cardboard
· solid waste
"Melamine"
No labels

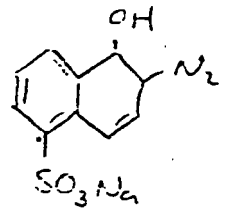
Waste Methylene Chloride (25)
· No labels
· No accum dates

⇒ 19 drums
IPA/Heptane

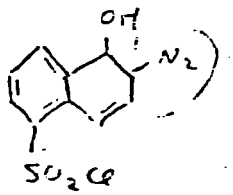
Spent Carbon in Corrode bags

8 - drums flammable solids
· No labels.

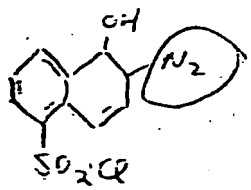
(12) barrels
"Unknowns"
(4) "for years"

①  + $NaHSO_3$ (excess)

↓ 50-55°C — 3rd floor — process mixing non-contact cooling waters → lagoon

②  + $NaHSO_4$ + $NaHSO_3$ (excess)

↓ ice water < 5°C — 2nd floor quenched → drops product out

②  + $NaHSO_4$ + HCl + H_2SO_4 + decomposition products

③

centrifuged 2nd

solid goes to multiple effects then out

↓ 50% NaOH to pH 10 — ④ 2nd floor neutralization

$3\,Na_2SO_4 + NaCl + 4\,H_2O$ + decomposition products

2nd floor

↓ Activated Carbon } filtered off ⑤

then goes to 500 gallon sewage tank

← $3\,Na_2SO_4 + NaCl + 4\,H_2O$

↓ HCl to pH 4-9 ⑤

$3\,Na_2SO_4 + NaCl + 4\,H_2O$

(1) Na - 125 (2- Diazo - 1- Naphthol - 5- Sulfonic Acid Sodium Salt)

(2) Diazo Cl 215 (2- Diazo - 1- Naphthol - 5- Sulfonyl Chloride)

(3) Filtrate

(4) pH adjustment to remove heavy metals and carbon treatment to remove organic decomposition products

(5) pH adjustment to bring filtrate into a non-hazardous waste catagory

MANUFACTURING RECORD CARD

PRODUCT: KEX 450 CONCENTRATE

LOT NUMBER: _____

AMOUNT		MATERIAL	Charged by	Checked by	DATE
1Drum	Drums				
		Mix thoroughly in the following order:			
23½gal		Variquat K-375			
16¼gal		Triton X-207			
4¼gals		Sun Par-130			
		If the above materials are cold			
		(as in winter) they should be			
		heated before mixing.			
		Mix and heat thoroughly:			
7 gals		Hexylene Glycol			
30 lbs.		Dowicide 7E C (TOXIC wear gloves and mask)			
		when completely mixed, add to the first			
		mixture and mix thoroughly			
		Charge to drum(s)			
		REMOVE A RESERVE SAMPLE			

Net Yield: _____

Date: _____

Checked by: _____